

-continued

cagctggctc ggcgctgggc agccaggagc ctgggccccg gggaggcgcg tccggggcgg	900
cgcggtgggc cgagcgcggg tccgcctcc ttgaggcggg cccgggcggg gcggtgtat	960
atcagggcgc cgctgagctg cgccagctga ggtgtgagca gct	1003

1. A small activating RNA, wherein the small activating RNA is composed of:

- i. a first oligonucleotide strand containing 17 to 30 nucleotides; and
- ii. a second oligonucleotide strand containing 17 to 30 nucleotides, wherein a sequence of at least 15 nucleotides in length in the first oligonucleotide strand is complementary to the second oligonucleotide strand to form a duplex, and wherein the first oligonucleotide strand or the second oligonucleotide strand has more than 75% homology or complementarity with any continuous fragment of 15 to 30 nucleotides in length in the promoter of a target gene;

wherein one end of the duplex is a blunt end, and the other end of the duplex has an overhang with 1 to 4 nucleotides at the terminus of the first oligonucleotide strand or the second oligonucleotide strand.

2. The small activating RNA of claim **1**, wherein one end of the duplex is a blunt end, and the other end has an overhang with 2 or 3 nucleotides at the terminus of the first oligonucleotide strand or the second oligonucleotide strand.

3. The small activating RNA of claim **1**, wherein the nucleotides of the overhang are selected from thymine, uracil, or natural nucleotides.

4. The small activating RNA of claim **3**, wherein the overhang is selected from dTdTdT, dTdT, UUU, UU, or 2 or 3 continuous natural nucleotides.

5. The small activating RNA of claim **1**, wherein the blunt end of the duplex is at a 5' terminus of the first or second oligonucleotide strand, wherein 1 to 3 nucleotides of the first to third nucleotides from the 5' terminus in the first or second oligonucleotide strand are mispaired with nucleotides at the corresponding positions in the other strand.

6. The small activating RNA of claim **5**, wherein the mispaired nucleotide is a cytosine.

7. The small activating RNA of claim **1**, wherein the length of the duplex formed by the first oligonucleotide strand and the second oligonucleotide strand is 17 to 24 nucleotides.

8. The small activating RNA of claim **7**, wherein the length of the duplex formed by the first oligonucleotide strand and the second oligonucleotide strand is 18 to 20 nucleotides.

9. The use of the small activating RNA of claim **1** in the preparation of a formulation for activating or upregulating the expression of a target gene in a cell.

10. The use of claim **9**, wherein the small activating RNA is introduced into the cell directly.

11. The use of claim **10**, wherein the cell is a mammalian cell.

12. The use of claim **11**, wherein the cell is a human cell and is present in a human body.

13. The use of claim **12**, wherein the human body suffers from a disease caused by the defect and/or deficiency of target gene expression, and the small activating RNA is administered in an effective amount to treat the disease.

14. The small activating RNA of claim **1**, wherein the target gene is selected from the group consisting of human p21, KLF4, NKX3-1, and VEGFA.

15. The small activating RNA of claim **14**, wherein the small activating RNA activates or upregulates the expression of p21 by at least 10%.

16. A composition, comprising the small activating RNA of claim **14** and a pharmaceutically acceptable carrier.

17. The composition of claim **16**, wherein the pharmaceutically acceptable carrier is a liposome, a macromolecular polymer, or a polypeptide.

18. The use of the small activating RNA of claim **14** in the preparation of a formulation for activating or upregulating the expression of the target gene.

19. The use of claim **18**, wherein the preparation of the formulation is for treating a tumor or a benign proliferative lesion.

20. The use of claim **19**, wherein the tumor is selected from a bladder cancer, a prostate cancer, a hepatoma, and a colorectal cancer.

21. A method of treating a bladder cancer, a prostate cancer, a hepatoma, or a colorectal cancer in a subject in need thereof, the method comprising administering to the subject in need thereof an effective amount of the composition of claim **16**.

* * * * *